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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/774,821

02/09/2004

Timo Herranen

872.0174.U1(US)

9240

29683 7590 05/29/2008
HARRINGTON & SMITH, PC
4 RESEARCH DRIVE
SHELTON, CT 06484-6212

EXAMINER

HERNANDEZ, NELSON D

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

05/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/774,821	Applicant(s) HERRANEN ET AL.	
	Examiner Nelson D. Hernández	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 28, 2008 has been entered.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Response to Amendment

3. The Examiner acknowledges the amended claims filed on December 14, 2007. **Claims 1, 12, 19, 24, 33, and 37** have been amended.

Response to Arguments

4. Applicant's arguments with respect to **claims 1, 12, 19, 24, 33, and 37** have been considered but are moot in view of the new grounds of rejection and/or new interpretation of the previously used prior art for rejection.

5. The Applicants also argues the following:

a. The height of applicants' claimed stepless movement height connection is significant as this provides for the connection to extend between distances greater than the height of the connector. This allows for the camera to be fitted at the various heights 87, 88, 89 (see Figs. 9-11) with respect to the printed wiring board. This allows for applicants' claimed invention to perform differently when compared to the disclosure of Miyake which only allows for a single height (within the socket component 29) when the substrate 28 is fitted into the socket component 29 (see col. 26, lines 27-28) and mounted to the main substrate 30 (see Fig. 67 and col. 26, lines 31-32).

There is no teaching or suggestion in Miyake to provide a stepless movement height connection which extends beyond a height of the socket component 29. Thus, Miyake fails to teach a stepless movement height connection which allows the camera to slide relative to the electrical connector along a first axis to allow positioning of the camera relative to the electrical connector at one of a plurality of different heights along the first axis, wherein the plurality of different heights extends along a majority of a height of the camera and wherein the majority of the height of the camera is greater than a height of the electrical connector, as claimed in amended claim 1.

➤ The Examiner understands that the invention relates to a camera module having conductors extending along the majority of the side of said camera module so that can be slid on the connector and placed at different heights

(provides stepless connection as claimed), wherein the height of the portion on the side of the camera that is covered by the electrical conductors is larger than the height of the electrical connector, thus the height of the electrical conductors on the side of the camera is greater than the height of the connector. However, the claim as written does not necessarily require providing a stepless movement height connection which extends beyond a height of the socket component as argued or that the height of the portion on the side of the camera that is covered by the electrical conductors is larger than the height of the electrical connector, thus the height of the electrical conductors on the side of the camera is greater than the height of the connector. Furthermore, the camera module in Miyake as shown in fig. 64 can be slid in the connector at different height positions relative to the connector.

➤ In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., provide a stepless movement height connection which extends beyond a height of the connector) are not recited in the rejected claims.

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

➤ Arguments related to claims 19 and 37 are covered by the response to the arguments related to claim 1 as discussed above.

➤ Arguments related to claim 12 are moot in view of a new interpretation given to the Miyake reference.

b. Applicants have amended claim 24 to recite, inter alia, "wherein the housing comprises a plastic material, wherein the camera comprises electrical conductors on the housing, wherein the electrical conductors directly contact electrical contacts of the electrical connector". Miyake discloses an imaging element 2, a substrate 28, and a socket component 29. The substrate 28 includes a circuit pattern 28a formed on a side thereof. The socket component 29 comprises an opening section 29b. The socket component 29 has a circuit pattern 29a which enables electrical connection with the circuit pattern 28a when the substrate 28 constituting the imaging device is fitted into the socket component 29 (see col. 26 lines 6-9). There is no disclosure or suggestion in Miyake to provide the circuit pattern 28a on the imaging element 2. Additionally, Miyake does not teach that the housing of the imaging element 2 comprises a plastic material. Thus Miyake does not teach or suggest a camera housing comprising a plastic material, wherein the camera comprises electrical conductors on the housing, and wherein the electrical conductors directly contact electrical contacts of the electrical connector, as claimed in applicants' claimed invention.

➤ The Examiner disagrees. Although the circuit pattern 28a does not extend to portion 2 of the imaging device, since the Examiner is reading the combination of the circuit pattern 28a and the imaging element 2 as the camera as claimed,

the Examiner understands that the Miyake reference discloses that the electrical conductors directly contact electrical contacts of the electrical connector.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-4, 7, 8 and 11-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyake, US Patent 7,110,033 B2.

Regarding claim 1, Miyake discloses an electronic device (portable cellular phone; col. 27, lines 28-38) comprising: a device printed wiring board (Fig. 67: 30); an electrical connector (Figs. 64: 29 and 67: 29) connected to the device printed wiring board (See fig. 67); a camera (Fig. 64: 2) coupled to the device printed wiring board by the electrical connector at a stepless movement height connection (note that the connectors 28a of the camera 2 allows the camera to be slid into the connector at a stepless movement; see fig. 64), wherein the stepless movement height connection allows the camera to slide relative to the electrical connector along a first axis to allow positioning of the camera relative to the electrical connector at one of a plurality of different heights along the first axis, wherein the plurality of different heights extends

along a majority of a height of the camera (Note that the structure of the camera in Miyake allows the camera to be slid into the connector at one of a plurality of different heights since the connectors 28a extend along the majority of the casing of said camera, providing connection at any position where the camera is positioned inside the connector), and wherein the majority of the height of the camera is greater than a height of the electrical connector (As shown in fig. 64, the majority of the height of the camera is greater than a height of the electrical connector. Note that the distance from the lower portion of the camera to the upper portion of the light receiving surface 2a is larger than the height of the connector) (Col. 25, ¶ 62 – col. 27, line 38).

Regarding claim 2, limitations can be found in claim 1.

Regarding claim 3, limitations can be found in claim 1.

Regarding claim 4, Miyake discloses that the electrical connector comprises a camera receiving slot with electrical contacts (see electric pattern inside connector 29 as shown in figs. 64 and 67) extending into the camera receiving slot, and wherein the camera is located in the camera receiving slot (Col. 25, ¶ 62 – col. 27, line 38).

Regarding claim 7, limitations can be found in claim 1.

Regarding claim 8, limitations can be found in claim 1.

Regarding claim 11, limitations can be found in claim 1.

Regarding claim 12, (Note that claim 12 is written broad enough that the Examiner is reading the claimed elements as other elements in the same embodiment in Miyake). Miyake discloses a portable electronic device camera (Fig. 64) comprising: a housing (See fig. 64; 29, Note that in this rejection the Examiner is reading the

connector 29 in Miyake as the housing as claimed); electrical conductors extending along a rear end of the housing (See electrical conductors 29a as shown in fig. 65C extending along a rear end of said housing) and along a first lateral side (inside) of the housing (See conductors inside the connector 29 (read as a housing by the Examiner)); wherein the electrical conductors are adapted to be removably connected to contacts (Fig. 64: 28a, the housing 29 is removably connected to the conductors 28a of the camera) of an electrical connector (Fig. 64: 28a, the Examiner is reading the pattern 28 as the electrical connector) located along the first lateral side of the housing (See fig. 64, the connector 28a is located along a first lateral side (the inside) of the housing 29), and wherein a height of the electrical conductors (the height of the electrical conductors inside the housing 29) along the first lateral side (inside) of the housing (29) is sized and shaped to be greater than a height of the electrical connector (connector 28a) when the camera is connected to the electrical connector (the camera is composed of an image element 2 that is connected to the circuit board 28 having the patterns 28a that the examiner is reading as the connector) (Col. 25, ¶ 62 – col. 27, line 38).

Regarding claim 13, limitations can be found in claim 12.

Regarding claim 14, Miyake discloses that the electrical conductors comprises metallized conductor paths along exterior sides of the housing (See fig. 64).

Regarding claim 15, limitations can be found in claim 12.

Regarding claim 16, Miyake discloses that the electrical conductors along the first lateral side are adapted to slide along the contacts of the electrical connector in a first axis of insertion (optical axis) of the portable electronic device camera into the

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electrical connector to provide an adjustable height connection of the portable electronic device camera to the electrical connector (Note that the structure of the camera in Miyake allows the camera to be slid into the connector (read as the housing) at one of a plurality of different heights since the connectors 28a extend along the majority of the casing of said camera, providing connection at any position where the camera is positioned inside the connector) (Col. 25, ¶ 62 – col. 27, line 38).

Regarding claim 17, Miyake discloses an image inlet aperture is located at a front end of the housing (Miyake, Fig. 64: 2a).

Regarding claim 18, limitations can be found in claim 12.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5, 6, 19-23, 31 and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake, US Patent 7,110,033 B2 in view of Miyake, US Patent 6,836,669 B2.

Regarding claim 5, Miyake 033 does not explicitly disclose that the device printed wiring board comprises a slot, and wherein the camera extends through the slot.

However, Miyake discloses a portable telephone (Fig. 1) provided with a camera (Fig. 1: 1), said portable telephone comprising a telephone printed wiring board (mother board 2 as shown in fig. 1) having a transceiver attached to said printed wiring board (Miyake inherently disclose a transceiver attached to the mobile telephone printed wiring board since a transceiver is necessitated in a mobile telephone printed wiring board to transmit and receive data), wherein said telephone printed wiring board comprises camera electrical connector (formed as a hole in the substrate) having a camera receiving area (opening 201 as shown in fig. 2A) adapted to receive a camera therein and make electrical contact with conductors (Fig. 2A: 104), said receiving portion comprises a through hole extending entirely through a said camera electrical connector (See figs. 1 and 2A) (Col. 4, line 63 – col. 5, line 46).

Therefore, taking the combined teaching of Miyake 033 in view of Miyake 669 as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electrical connector in Miyake 033 by having a slot in the printed wiring board and having the camera extending through the slot. The motivation to do so would have been to reduce the size and thickness of the mobile telephone as suggested by Miyake 669 (Col. 2, lines 36-43).

Regarding claim 6, the combined teaching of Miyake 033 in view of Miyake 669 as discussed and analyzed in claim 5 teaches that the camera comprises contacts and the electrical connector comprises substantially stationary conductors, and wherein the contacts are adapted to slide along the substantially stationary conductors when the camera is inserted into the electrical connector and into the slot of the device printed

wiring board (Miyake 033, col. 25, ¶ 62 – col. 27, line 38) but fails to teach that the contacts are spring contacts.

However, Official Notice is taken that the use of spring contacts (such as J-lead contacts) in semiconductor devices to connect said semiconductor device to a wiring board is notoriously well known in the art and one of ordinary skill in the art would find obvious to have the contact of the camera in Miyake 033 and Miyake 966 made as a spring with the motivation of maintaining the image pickup device in place while protecting the device from cracking when assembling said device to a substrate or a wiring board.

Regarding claim 19, Miyake 033 discloses a printed wiring board (Fig. 67: 30) and electrical connector subassembly (Fig. 64: 29 and 67: 29) comprising: a mobile telephone printed wiring board (Fig. 67: 30; Miyake 033 discloses that the camera is mounted to a cellular phone) having a transceiver attached to the mobile telephone printed wiring board (Miyake 033 inherently disclose a transceiver attached to the mobile telephone printed wiring board since a transceiver is necessitated in a mobile telephone printed wiring board to transmit and receive data); and a camera electrical connector (Fig. 64: 29 and 67: 29) attached to the mobile telephone printed wiring board (See fig. 67), wherein the camera electrical connector comprises a camera receiving area adapted to receive a camera therein and make electrical contact at one of a plurality of different locations along a majority of a height of the camera inside the camera receiving area (Note that the structure of the camera in Miyake 033 allows the camera to be slid into the connector at one of a plurality of different heights since the

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connectors 28a extend along the majority of the casing of said camera, providing connection at any position where the camera is positioned inside the connector), wherein a height of the camera receiving area is sized and shaped to be less than the majority of the height of the camera when the camera is received in the camera receiving area (As shown in fig. 64, the majority of the height of the camera is greater than a height of the electrical connector. Note that the distance from the lower portion of the camera to the upper portion of the light receiving surface 2a is larger than the height of the connector. Therefore, Miyake discloses that a height of the camera receiving area is sized and shaped to be less than the majority of the height of the camera when the camera is received in the camera receiving area) (Col. 25, ¶ 62 – col. 27, line 38).

Miyake 033 does not explicitly disclose that said camera receiving area comprises a through hole extending entirely through a housing of the camera electrical connector.

However, Miyake 669 discloses a portable telephone (Fig. 1) provided with a camera (Fig. 1: 1), said portable telephone comprising a telephone printed wiring board (mother board 2 as shown in fig. 1) having a transceiver attached to said printed wiring board (Miyake 669 inherently disclose a transceiver attached to the mobile telephone printed wiring board since a transceiver is necessitated in a mobile telephone printed wiring board to transmit and receive data), wherein said telephone printed wiring board comprises camera electrical connector (formed as a hole in the substrate) having a camera receiving area (opening 201 as shown in fig. 2A) adapted to receive a camera

therein and make electrical contact with conductors (Fig. 2A: 104), said receiving portion comprises a through hole extending entirely through a said camera electrical connector (See figs. 1 and 2A) (Col. 4, line 63 – col. 5, line 46).

Therefore, taking the combined teaching of Miyake 033 in view of Miyake 669 as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electrical connector in Miyake 033 by making a through hole extending entirely through a housing of the camera electrical connector. The motivation to do so would have been to reduce the size and thickness of the mobile telephone as suggested by Miyake 669 (Col. 2, lines 36-43).

Regarding claim 20, the combined teaching of Miyake 033 in view of Miyake 669 as discussed and analyzed in claim 19 teaches that the camera electrical connector comprises contacts (See Miyake 033 figs. 64 and 67) extending into the camera receiving area (See Miyake 033 figs. 64 and 67) from a first lateral side of the camera receiving area (See Miyake 033 figs. 64 and 67) but fails to teach that the contacts are spring contacts.

However, Official Notice is taken that the use of spring contacts (such as J-lead contacts) in semiconductor devices to connect said semiconductor device to a wiring board is notoriously well known in the art and one of ordinary skill in the art would find obvious to have the contact of the camera in Miyake 033 and Miyake 669 made as a spring with the motivation of maintaining the image pickup device in place while protecting the device from cracking when assembling said device to a substrate or a wiring board.

Regarding claim 21, the combined teaching of Miyake 033 and Miyake 669 as discussed and analyzed in claim 20 teaches that the spring contacts extend into the camera receiving area from a second opposite lateral side of the camera receiving area (See Miyake 033, figs. 64 and 67).

Regarding claim 22, the combined teaching of Miyake 033 and Miyake 669 as discussed and analyzed in claim 20 teaches that the camera electrical connector comprises a housing with a general ring shape (See Miyake 033, figs. 64 and 67) and wherein the camera receiving area is located inside the general ring shape (See Miyake 033, figs. 64 and 67).

Regarding claim 23, limitations can be found in claim 19.

Regarding claim 31, limitations can be found in claim 19.

Regarding claim 33, this is a method claim of the apparatus in claim 19.
Therefore, grounds for rejecting claim 19 apply here.

Regarding claim 34, limitations can be found in claim 20.

Regarding claim 35, limitations can be found in claim 21.

Regarding claim 36, limitations can be found in claim 20.

Regarding claim 37, Miyake 033 discloses an electronic device (Fig. 64) comprising: a device printed wiring board (Fig. 67: 30); and a camera (Fig. 64; 2) mounted on a connector (Fig. 67: 29) on the device printed wiring board and coupled to the device printed wiring board by a stepless movement variable height connection (Using connector 29 as shown in figs. 64 and 67), wherein the stepless movable height

connection (using connector 29 as shown in figs. 64 and 67) comprises a first portion (See fig. 64: 29a) connected to the device printed wiring board (Fig. 67: 30) and a second portion (See connection pattern formed inside the connector 29 as shown in figs. 64 and 67) connected to the camera, wherein the stepless movement variable height connection allows the camera to slide relative to the device printed wiring board along a first axis to allow positioning of the camera relative to the device printed wiring board at one of a plurality of different heights along the first axis, wherein the plurality of different heights extends along a majority of a height of the camera (Note that the structure of the camera in Miyake allows the camera to be slid into the connector at one of a plurality of different heights since the connectors 28a extend along the majority of the casing of said camera, providing connection at any position where the camera is positioned inside the connector), wherein the majority of the height of the camera is greater than a height of the first portion (As shown in fig. 64, the majority of the height of the camera is greater than a height of the electrical connector. Note that the distance from the lower portion (28) of the camera to the upper portion of the light receiving surface 2a is larger than the height of the connector) (Col. 25, ¶ 62 – col. 27, line 38).

Miyake does not explicitly disclose that the connector is a slot therethrough and that the camera extends through the slot.

However, Miyake 669 discloses a portable telephone (Fig. 1) provided with a camera (Fig. 1: 1), said portable telephone comprising a telephone printed wiring board (mother board 2 as shown in fig. 1) having a transceiver attached to said printed wiring board (Miyake inherently disclose a transceiver attached to the mobile telephone printed

wiring board since a transceiver is necessitated in a mobile telephone printed wiring board to transmit and receive data), wherein said telephone printed wiring board comprises camera electrical connector (formed as a hole in the substrate) having a camera receiving area (opening 201 as shown in fig. 2A) adapted to receive a camera therein and make electrical contact with conductors (Fig. 2A: 104), said receiving portion comprises a through hole extending entirely through a said camera electrical connector (See figs. 1 and 2A) (Col. 4, line 63 – col. 5, line 46).

Therefore, taking the combined teaching of Miyake 033 in view of Miyake 669 as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the electrical connector in Miyake 033 by making a through hole extending entirely through a housing of the camera electrical connector and have said camera extending through the slot. The motivation to do so would have been to reduce the size and thickness of the mobile telephone as suggested by Miyake 669 (Col. 2, lines 36-43).

Regarding claim 38, the combined teaching of Miyake 033 in view of Miyake 669 as discussed and analyzed in claim 19 teaches that the device printed wiring board comprises contact pads at the slot and the camera comprises contacts in the slot and slidable along the contact pads (Miyake 033, fig. 64: 29a) but fails to teach that the camera contacts are spring contacts.

However, Official Notice is taken that the use of spring contacts (such as J-lead contacts) in semiconductor devices to connect said semiconductor device to a wiring board is notoriously well known in the art and one of ordinary skill in the art would find

obvious to have the contact of the camera in Miyake 033 and Miyake 669 made as a spring with the motivation of maintaining the image pickup device in place while protecting the device from cracking when assembling said device to a substrate or a wiring board.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake, US Patent 7,110,033 B2 in view of Harazono, US Patent 7,029,186 B2.

Regarding claim 9, Miyake discloses that the electrical conductors extend along an adjacent side of the housing (See fig. 64) but does not explicitly disclose that the connectors also extends along a rear end of the housing and that the camera comprises a camera printed wiring board connected to the rear end of the housing and coupled to the electrical connectors.

However, Harazono teaches a camera system (See fig. 1), the camera system comprising a housing (Fig. 1: 1), electrical connector along a rear end of the housing and on at least a first lateral side of the housing (See fig. 9: 105) to establish electrical connection with the image pick-up semiconductor (Fig. 1: 4), a camera printed wiring board (Fig. 8: 13) stationarily connected to the rear end of the housing and coupled to the housing electrical conductors (Fig. 7: 105 and fig. 9: 105); said housing including an image pick-up device (Fig. 7: 104) (Col. 1, line 29 – col. 2, line 5). Having an image processing stationary connected to the camera is advantageous because it would reduce the size and cost of assembling of the portable electronic device.

Therefore, taking the combined teaching of Miyake in view of Harazono as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miyake by having a camera printed wiring board stationarily connected to the housing and coupled to the electrical conductors. The motivation to do so would have been to reduce the size and to enhance the performance of the image capturing device as suggested by Harazono (Col. 1, lines 6-27).

11. Claims 24, 25, 28-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake, US Patent 7,110,033 B2.

Regarding claim 24, Miyake discloses a portable electronic device (portable cellular phone; col. 27, lines 28-38) comprising: a device printed wiring board (Fig. 67: 30); an electrical connector (Figs. 64: 29 and 67: 29) connected to the device printed wiring board, wherein the electrical connector has a camera receiving slot (Fig. 65: 29b); and a camera (As shown in fig. 64, the camera consisting of elements 2, 2a, 28 and 28a) coupled to the printed wiring board by the electrical connector (See figs. 64 and 67, the camera is inserted into the connector slot), wherein a housing of the camera is located partially inside the camera receiving area to provide a substantially stationery telescoping connection with a partially coplanar height (Note that the structure of the camera in Miyake allows the camera to be slid into the connector at one of a plurality of different heights since the connectors 28a extend along the majority of the casing of said camera, providing connection at any position where the camera is positioned inside

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the connector), wherein the camera comprises electrical conductors (Fig. 64: 28a) on the housing (Fig. 64: 2), wherein the electrical conductors directly contact electrical contacts of the electrical connector (note that connectors 28a directly contact the electrical contacts of the connector (see contacts of the connector 29 as shown in figs. 64 and 67)) and wherein the electrical conductors extend along a majority of the height of the camera (see conductors 28a extending along a majority of the height of the camera as shown in fig. 64) (Col. 25, ¶ 62 – col. 27, line 38).

Miyake does not explicitly disclose that the housing comprises a plastic material.

However, Official Notice is taken that the use of plastic to create camera housings is notoriously well known in the art with the purpose of reducing costs of production, isolation of the electrical conductors, different type of application, etc. Therefore, it would have been obvious to one of an ordinary skill in the art at the time the invention was made to have the camera housing comprising a plastic material with the motivation of having an alternative material that would meet price, weight, applications and other requirements for production.

Regarding claim 25, Miyake discloses that the electrical connector comprises a housing with a general ring shape and wherein the camera receiving slot is located inside the general ring shape (See fig. 65C).

Regarding claim 28, Miyake discloses that the camera comprises electrical conductors (Fig. 64: 28a) on at least one lateral side of the housing of the camera which are located inside the camera receiving slot (Fig. 64: 29).

Regarding claim 29, Miyake discloses that the electrical conductors comprise metallized conductors formed on exterior sides of the housing of the camera (Fig. 64: 28a).

Regarding claim 30, limitations can be found in claim 24.

Regarding claim 32, limitations can be found in claim 24.

12. Claims 10, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake, US Patent 7,110,033 B2 in view of Nishio, US Patent 7,077,663 B2.

Regarding claim 10, Miyake discloses that the electrical connector comprises a housing having a general ring shape (See figs. 64, 65C and 67) with a center camera receiving slot (See figs. 64, 65C and 67) but does not explicitly disclose electrical spring contacts extending into the camera receiving slot from opposite sides of the general ring shape.

However, Nishio discloses an electronic device (Col. 4, lines 46-53) comprising: a device printed wiring board (Col. 4, line 66 – col. 5, line 10); an electrical connector (Figs. 2B: 25 and 3: 25) connected to the device printed wiring board; a camera (Figs. 1C: 21 and 3: 21) coupled to the device printed wiring board by the electrical connector at a stepless movement height connection (Col. 4, line 54 – col. 5, line 40), wherein the stepless movement height connection allows the camera to slide relative to the electrical connector along a first axis (optical axis) to allow positioning of the camera relative to the electrical connector at one of a plurality of different heights along the first

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axis (As shown in fig 3, the camera can be slid relative to the circuit board since the pins 26 are formed as springs that would allow to move the camera and can also hold in place said camera without needing to have steps to hold the camera in place) (Col. 4, line 44 – col. 5, line 40); wherein the electrical connector comprises a housing having a general ring shape (See figs. 2A, 2D and 3) with a center camera receiving slot (See figs. 2D: 25 and 3: 25), and electrical spring contacts (Fig. 2D: 26 and 3: 26) extending into the camera receiving slot from opposite sides of the general ring shape (See figs. 2D and 3).

Therefore, taking the combined teaching of Miyake in view of Nishio as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miyake by having electrical spring contacts extending into the camera receiving slot from opposite sides of the general ring shape. The motivation to do so would have been to efficiently secure the connector as suggested by Nishio (Col. 4, line 66 – col. 5, line 67).

Regarding claim 26, limitations can be found in claim 10.

Regarding claim 27, limitations can be found in claim 10.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernández whose telephone number is (571)272-7311. The examiner can normally be reached on 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Nelson D. Hernández
Examiner
Art Unit 2622

NDHH
May 16, 2008

/Lin Ye/

Supervisory Patent Examiner, Art Unit 2622